

REMARKS

Claims 1 through 24 are currently pending in the application.

Claims 1 through 7 have been amended. It is respectfully submitted that these amendments are made without prejudice or disclaimer to the subject matter that was previously cited in each of these claims.

This amendment is in response to the Office Action of January 24, 2002.

Claims 1 through 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan et al. (U.S. Patent 6,322,229).

Claims 8 through 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan et al. in view of Garcia Jr. et al. (U.S. Patent 5,034,602).

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicant has amended the claimed invention to clearly distinguish over the cited prior art. Claims 1 through 7 have been amended. It is respectfully submitted that these amendments are made without prejudice or disclaimer to the subject matter that was previously cited in each of these claims. Reconsideration of the application is respectfully requested in light of the amendments and remarks presented herein.

Applicant further submits that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

Chan

Claims 1 through 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan et al. (U.S. Patent 6,322,229).

Chan discloses a keyboard with backlighting that originates below the keys. A panel of light-emitting electroluminescent material extends below the key caps; this panel emits light between the key caps and through key caps made of translucent material.

Claim 1, as proposed to be amended herein, recites a remote computer keyboard that includes luminescent material illuminating a graphic symbol on each key cap.

Chan does not disclose, teach, or suggest the claim limitation of presently amended independent claim 1 calling for the use of self-powered luminescent material to illuminate symbols on a keyboard. Rather the illumination in the keyboard disclosed in Chan is from electroluminescent material. Therefore, Chan cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention.

A *prima facie* case of obviousness will not be established without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). The capability of one of ordinary skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). In this instance, when considering presently amended claim 1, there is no objective reason in the Chan reference for any modification thereof.

Accordingly, presently amended independent claim 1 is allowable.

Claims 2 through 5 are each allowable, among other reasons, as depending from claim 1, which should be allowed.

Claim 3 is additionally allowable because Chan does not teach the use of light emitted from the key caps. Chan does teach the use of backlighting, where light emitting from below the key caps allows symbols on the key caps to be identified in low light conditions. In claim 3, luminescent material embedded with the key cap will allow the key cap itself to emit light.

Claims 4 and 5, as amended herein, are further allowable since Chan does not disclose, teach, or suggest symbols on key caps formed from luminescent material or tritium. Chan does not suggest that the symbols could be formed from a light-emitting material. Chan only discloses the use of transparent material forming the symbols on opaque key caps. The light passes

through the symbol material, rather than the symbol emitting the light. Further, the light emitting sources disclosed in Chan are located below the key caps rather than on the key caps.

Independent claim 6, as amended herein, recites a remote computer keyboard with key caps illuminated using optical fiber strands. Claim 6 been rejected as being unpatentable in view of Chan. Chan does not teach the use of optical fiber strands directing light. Examiner has rejected other claims using optical fiber strands as obvious in view of Garcia. Garcia, discussed further below, does not suggest the use of thin strands of optical fiber to direct light. Garcia teaches the use of bulky wave guides and light reflectors to direct light within the keyboard

Independent claim 7, as amended herein, recites the use of a projector pane to receive light and apertures within the pane to direct the light within a remote keyboard. The light source is battery-powered, and the projector pane is located below the key caps.

Chan does not disclose, teach, or suggest a projector pane having apertures which direct light. Rather, the light-emitting panel located below the key caps of the Chan keyboard uniformly and indiscriminately directs light upwards as it is emitted. The light is not emitted from a nearby source and directed toward a specific key cap.

Therefore, Chan does not disclose, teach, or suggest each and every element of claim 7, as proposed to be amended. Accordingly, it is respectfully submitted that claim 7, as proposed to be amended, is not rendered obvious by Chan.

Chan in view of Garcia

Claims 8 through 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan et al. in view of Garcia Jr. et al. (U.S. Patent 5,034,602).

Garcia teaches a keyboard with backlighting directed to individual key caps through a plunger using intersecting wave guides. The terminal end of the plunger has a light reflective portion which deflects light from the horizontal wave guide to the vertical wave guide within the plunger.

Claim 8 recites a remote computer keyboard that includes luminescent material embedded within each key cap. Neither Chan nor Garcia, taken alone or in any combination under the provisions of 35 U.S.C. § 103, teaches or suggests the use of self-powered luminescent material to illuminate symbols on a keyboard. Rather the illumination in the keyboard disclosed in Chan is from electroluminescent material, and the only light sources suggested in Garcia are bulbs, LED or LCD devices. Therefore, it is respectfully submitted that claim 8 is allowable over the combination of Chan and Garcia because the cited prior art fails to establish a *prima facie* case of obviousness because the cited prior art does not teach or suggest the claim limitations of the claimed invention of claim 8.

Claim 9 is allowable, among other reasons, as depending from claim 8, which should be allowed. Claim 9 recites that the symbols on the key caps will be identifiable both under bright and non-bright lighting conditions. In non-bright light, the luminescent material will luminesce for a period of time. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of luminescent material to identify symbols on a keyboard in non-bright conditions.

Independent claim 10 recites a remote keyboard including symbols formed from luminescent material on an upper surface of key caps. Independent claim 11 recites a remote keyboard including symbols formed from material imbedded with tritium. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests forming symbols on key caps from luminescent material or tritium. Further, the light emitting sources disclosed in Chan and Garcia are located below the key caps rather than locating the light emitting source on the key caps themselves.

Independent claim 12 recites a remote keyboard including a light source powered by a chemical source of power and optical fiber strands directing the light to light transmissible key caps. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of optical fiber strands within a keyboard. Rather, Chan does not teach any method of directing light to specific locations, and Garcia teaches the use of wave guides and light reflectors to direct

light in limited directions. Therefore, it is respectfully submitted that claim 12 is allowable over the combination of Chan and Garcia.

Claims 13 and 14 are each allowable, among other reasons, as depending from claim 12, which should be allowed.

Claim 13 recites a remote computer keyboard with optical fiber strands reaching to the individual key caps through apertures in the circuit board beneath. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests providing access for light through apertures in the circuit board. Rather, the light source in Chan is located above the circuit board, and Garcia does not include a circuit board in the invention. The Garcia keyboard lighting system functions above the circuit board.

Independent claim 15 recites a remote computer keyboard including a light source powered by a chemical source of electrical power. A projector pane below the key caps of the keyboard receives light and directs it to each key cap using apertures.

Neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of a projector pane with apertures to direct light. The light in the Garcia keyboard is directed using intersecting waveguides, and the light in the Chan keyboard is not specifically directed to individual key caps.

It is respectfully submitted that claim 15 is not rendered obvious by Chan in view of Garcia. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests each and every limitation of claim 15.

Claims 16 through 18 are each allowable, among other reasons, as depending from claim 15, which should be allowed.

Claim 16 is further allowable since neither Chan nor Garcia teach or suggest the use of apertures in a projector pane covered with a reflective coating.

Claim 17 is additionally allowable because the lighting apparatuses of both Chan and Garcia are located above, not below, the printed circuit board.

Claim 18 is further allowable because neither Chan nor Garcia teach or suggest the use of apertures in a projector pane. Therefor, a remote keyboard with apertures positioned directly beneath a key cap is not rendered obvious.

Independent claim 19, recites an illuminated remote computer keyboard including a transmitter to send communications from the keyboard, powered by a chemical source of electrical power. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of a lighting system in a remote keyboard. Nor is there any suggestion of a transmitting device powered by a chemical source of electrical power. Neither Chan nor Garcia, taken alone or in combination, teaches or suggests each and every limitation of claim 19. Therefore it is respectfully submitted that claim 19 is allowable.

Claims 20 through 24 are each allowable, among other reasons, as depending from claim 19, which should be allowed.

Claims 20 through 22 are each further since neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of self-powered luminescent material to illuminate symbols on a keyboard, or form a part of each key cap.

Claim 23 is further allowable because neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of optical fiber strands to direct illumination provided by a light source which is powered by a chemical source of power.

Claim 24 is additionally allowable since neither Chan nor Garcia, taken alone or in combination, teaches or suggests the use of a projector pane with apertures to direct light.

For the reasons set forth hereinabove, Applicant submits that claims 1 through 24 are clearly allowable over the cited prior art.

Applicant requests the allowance of claims 1 through 24 and the case passed for issue.

Respectfully submitted,



James R. Duzan
Attorney for Applicant
Registration No. 28,393
TRASKBRITT, PC
P.O. Box 2550
Salt Lake City, Utah 84110
(801) 532-1922

Date: April 23, 2002

JRD/sls:djp

Enclosure: Version with Markings to Show Changes Made

N:\2269\3976\amendment2.wpd

APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

A marked-up version of each of the presently amended claims, highlighting the changes thereto, follows:

1. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality, each key cap having at least one
identifying graphic symbol formed on an upper surface thereof; and
[illumination apparatus] luminescent material illuminating said at least one graphic symbol on
each key cap.
2. (Twice Amended) The remote computer keyboard of claim 1, wherein said plurality
of depressible key switch devices includes a switch for a space function, a switch for a shift
function, and a switch for a control function.
3. (Amended) The remote computer keyboard of claim 1, wherein said [illumination
apparatus] luminescent material includes luminescent material embedded within each key cap.
4. (Twice Amended) The remote computer keyboard of claim 1, wherein said
[illumination apparatus] luminescent material includes luminescent material forming each
symbol.

5. (Amended) The remote computer keyboard of claim 1, wherein said [illumination apparatus] luminescent material includes tritium embedded within each symbol.

6. (Amended) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap partially formed from light-transmissible material mounted atop each switch device of
said plurality, each key cap having at least one identifying graphic symbol formed on an
upper surface thereof; and
illumination apparatus illuminating said at least one graphic symbol on each key cap,
[The remote computer keyboard of claim 1, wherein] said illumination apparatus
[includes] including at least one battery-powered light source providing illumination to
multiple key caps using optical fiber strands. [, each key cap of said key caps partially
formed from light-transmissible material.]

7. (Twice Amended) A remote computer keyboard comprising:
an enclosure member;
a printed circuit board positioned in said enclosure member;
a plurality of depressible key switch devices arrayed above said printed circuit board;
a key cap mounted atop each switch device of said plurality, each key cap having at least one
identifying graphic symbol formed on an upper surface thereof; and
illumination apparatus illuminating said at least one graphic symbol on each key cap;
[The remote computer keyboard of claim 1, wherein] said illumination apparatus includes:
at least one battery-powered light source; and

Serial No. 09/544,000

a projector pane positioned beneath a plurality of key caps, said projector pane having an edge for receiving light from said at least one light source and having apertures which direct light from within the projector pane to each key cap of said plurality of key caps.